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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/693,077	10/24/2003	Qing Yang	022193-105.11US	3381

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EXAMINER

GU, SHAWN-X

ART UNIT	PAPER NUMBER
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2189

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/693,077	YANG, QING	
	Examiner	Art Unit	
	Shawn Gu	2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 December 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25,26,30,31,37,41,42 and 44-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25,26,30,31,37,41,42 and 44-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This final Office action is in response to the amendment filed 28 December 2006. Claims 25, 26, 30, 31, 37, 41, 42 and 44-46 are pending. Claims 1-24, 27-29, 32-36, 38-40 and 43 have been cancelled. All objections and rejections not repeated below are withdrawn.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

3. Claims 25, 26, 30, 31, 37, 41, 42 and 44-46 are rejected under 35 U.S.C. 102(e) as being anticipated by Carter et al. [6,148,377] (hereinafter "Carter").

Per claims 25, 37, 44, 45 and 46, Carters teaches an information backup system (Computer Network 10, Fig.1; for backup, see "replication" in col.10, ln.25-40, "fault-tolerant" in col.2, ln.54-55; also tape, disk, and RAID mentioned in col.3, ln.35-40 all imply a backup system) comprising:

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a plurality of computer systems (Nodes 12a-c, Fig.1; Col.5, Ln.60-67), each including a disk subsystem (Fig 2, 36a, 36b and Network Disk 20, see col.7, ln.1-8) and a network interface (Fig 3, 52, and col.9, ln.57), wherein each computer system is configured to direct disk I/O requests to said network interface (disk I/O requests to Network Disk 26, it is also implied by "RAID", see col.3, ln.39-41);

a communication network (Network 10 in Fig.1 and Col.6, Ln.1-11), to which each of said computer systems is coupled, said network configured to communicate said disk I/O requests and data associated with said disk I/O request among said plurality of computer systems (network shown in Figs 1-4);

a distributed cache memory (combination of local RAM caches 34a-c, see Fig.2 and Col.10, Ln.25-41) comprising a plurality of memory portions, each memory portion being a portion of a memory of a computer system among said computer systems, said memory portions being organized to function as a single coherent cache memory (the local RAM caches 34a-c serve as a single coherent cache for the shared memory space and the operation system 16, Col.7, Ln.18-38, Col.8, Ln.12-27, Col.10, Ln.25-41, Col.12 Ln.29-55); and

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a distributed data storage device (combination of RAID Disks 36a-c, see Fig.2 and col.3, ln.39-41) comprising a plurality of data storage portions, each data storage portion being a portion of a storage (Col.2, Ln.49-53) of one or more data storage devices of a computer system among said computer systems, said data storage portions being organized to function as a single data storage device (shared memory space and global address, see Fig.6, Col.7, Ln.18-52, Col.8, Ln.28-47, Col.12, Ln.30-55), wherein said computer systems can perform disk I/O with said distributed data storage device as a single logical disk (RAID disks imply a RAID system; also the local RAM and disks form a single shared memory, see col.8, ln.4-20, and the system generates global address signals to the persistent storage/disks, see col.4, ln.31-39 and col.8, ln.40-47, a disk directory manage also serves as a map between local and global addresses, see col.3, ln.63-67, col.4, ln.1-19 and col.10, ln.42-67, therefore from the point of view the computer systems there is a single logical disk that is globally accessible to all of them; further, see Fig 4, Shared Data 102 from the Global Disk Directory and see col.10, ln.49-50, the RAID disks form a global disk that is shared by all computer systems in Carter's invention) and wherein said distributed cache memory is operable as a cache memory for said distributed data storage device (each local RAM cache serves as data cache for requested pages of the shared memory space which consists of the RAID disks 36a-c).

It is clear that claims 25, 37, 45 and 46 are already substantially disclosed in claim 44 set forth.

Per claims 45 and 46, the first set of said computer systems is taught by Carter as Nodes 12a-12c, and Carter further teaches RAM memory (RAM, see Col.2, Ln.49-53, Col.3, Ln.22-40; Col.10, Ln.8-24).

Per claim 26, Carter further teaches said functionally coherent and physically distributed cache memory is operable as data cache for said disk I/O operations with said functionally coherent and physically distributed data storage device (each local RAM cache serves as data cache for requested pages of the shared memory space which consists of the RAID disks 36a-c).

Per claims 30 and 41, Carter further teaches said functionally coherent and physically distributed data storage device is configured as a functionally coherent and physically distributed RAID storage device (RAID, see Col.3, Ln.38-40).

Per claims 31 and 42, Carter further teaches said memory portions are portions of volatile random access memories of said plurality of computer systems (RAM, see Col.2, Ln.49-53, Col.3, Ln.22-40; Col.10, Ln.8-24).

Response to Arguments

4. Applicant's arguments filed on 28 December 2006 regarding claims 25, 26, 30, 31, 37, 41, 42 and 44-46 have been considered but they are not persuasive. The claims are taught by Carter as set forth above.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

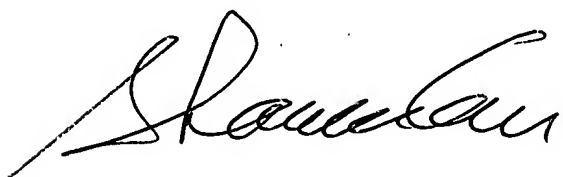
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

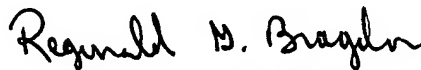
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn Gu whose telephone number is (571) 272-0703. The examiner can normally be reached on 9am-5pm, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reginald Bragdon can be reached on (571) 272-4204. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shawn X Gu
Patent Examiner
Art Unit 2189



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16 January 2007